

ABSTRACT OF THE DISCLOSURE

The present invention provides a method for reducing water bottom reflection time differences. The method includes selecting a plurality of trace groups, each trace having an offset from a midpoint and a water bottom reflection time. The method also includes
5 determining a rate of change of the water bottom reflection time of each trace and generating a model water velocity and a model water bottom reflection time for each trace midpoint using a preselected function of the water bottom reflection times and the rates of change. Furthermore, the method includes generating a plurality of water bottom reflection time
10 corrections for the traces in each trace group using a pre-selected function of the water bottom reflection times, the model water bottom reflection times, the model water velocities, and the trace offsets.